§103(a), as being unpatentable over Nakamura in view of Yoshikawa, Bruch, BEI Motion Systems Company and U.S. Patent No. 4,369,578 (Ernst). It is respectfully submitted that all of the claims presently pending in the application are patentably distinct over the prior art, including all of the prior art of record in the application, and are, therefore, allowable.

The combination of the cited prior art does not lead to the claimed invention nor does such a combination provide the advantages of the invention. Considering the BEI Motion Systems Company reference, none of the systems disclosed therein have parts of a probe disposed outside the housing, as required in claim 1, as amended. In view of the above, it is respectfully submitted that BEI Motion Systems Company does not disclose or suggest the present invention, as defined by the claims, and the claims are patentable over BEI Motion Systems Company.

Although Bruch discloses a fuse, in col. 3, lns. 46-47, the purpose of the fuse, as explained in lines 47-50, is so that the output voltage is limited to the breakdown voltage of the Zener diodes (if the diodes breakdown, a high current flows through them and the fuse blows). According to Bruch, the current is limited by an inline control element (col. 3, line 52), which is completely different than a fuse. Thus, Bruch does not teach or suggest using a fuse to limit the supply of current to the probe, as recited in claim 1. Furthermore, there is nothing suggested in Bruch that leads to the invention. In view of the above, it is respectfully submitted that Bruch does not disclose or suggest the present invention, as defined by the claims, and the claims are patentable over Bruch.

The Examiner states that "integrating a fuse only involves routine skill", but provides no evidence of this. The Board of Patent Appeals and Interferences held that when the references do not suggest the claimed combination.

> ". . . the Examiner must present a convincing line of reasoning as to why the artisan would have found the claimed combination to have been obvious in light of the teachings of the references (emphasis added)." Ex Parte Clapp, 227 U.S.P.Q. 973 (POB Pat App U& Inter. 1985).

No such reasoning is found in the Office Action.

Another key feature of the invention is that the fuses be formed by a sectional constriction of a cross section of the electrical connections comprising conductor strips. No separate parts as the fuse, as taught in Yoshikawa, are needed. The conductor strips, of the invention, are part of the printed circuit board the probe is made of, such that the fuses and the conductor strips that connect the probe to the electronic module can be manufactured together. Such an arrangement, which is not shown in the fuse of Yoshikawa, is advantageous over the fuse disclosed in such art. In view of the above, it is respectfully submitted that Yoshikawa does not disclose or suggest the present invention, as defined by the claims, and the claims are patentable over Yoshikawa.

Nakamura shows a magnetic sensor with magneto resistive elements. Nakamura is silent regarding a shielding, protection, or safety barrier for the probe, which is especially important when the device is used in explosive environments. Although the Examiner cites

col. 1, lns. 1-15, there is no teaching or disclosure at that citation that discuses this safety concern. In view of the above, it is respectfully submitted that Nakamura does not disclose or suggest the present invention, as defined by the claims, and the claims are patentable over Nakamura.

There is no suggestion in the cited prior art that would lead one of ordinary skill in the art of position measuring systems to attempt a combination of these references to achieve the invention as claimed in amended claim 1. Claims 3-5 and 7-9 depend on claim 1 and are allowable for the same reasons claim 1 is allowable and further because of specific features recited therein which, when taken alone and/or in combination with the features recited in claim 1, are not disclosed or suggested in the prior art.

CONCLUSION

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance, and allowance of the application is respectfully requested.

Should the Examiner require or consider it advisable that the specification, claims and/or drawings be further amended or corrected in formal respects, in order to place the case in condition for final allowance, then it is respectfully requested that such amendment or correction be carried out by Examiner's amendment and the case passed to issue.

Alternatively, should the Examiner feel that a personal discussion might be helpful in advancing this case to allowance, the Examiner is invited to telephone the undersigned.

Respectfully Submitted,

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Reg. No. 39,202

Dated: September 3, 2002
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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail and addressed to: Assistant Commissioner for Patents, Washington, DC 20231 on September 3, 2002.

Claim as amended

Serial No. 09/711,547
Applicant: Peter Fischer

1. (Amended) A scanning device for a position measuring system for scanning a scale graduation comprising:

a probe being operatively connected with the scale graduation and being supplied with electric power over a plurality of electrical connections;

an electronic module being electrically coupled to the probe;

a housing of the electronic module for shielding the electronic module from the surroundings, with at least parts of the probe being disposed outside the housing; and

means for limiting the supply of current to the probe, wherein at least one fuse is provided in the electrical connections, leading to the probe, within the housing, for interrupting the flow of current to the probe when the temperature produced as a result of the current flow exceeds a specific value, wherein the at least one fuse is formed by a sectional constriction of a cross section of the electrical connections and the electrical connections comprise conductor strips and wherein the housing of the electronic module further forms the housing of the at least one fuse.